

OPTICAL SWITCH WITH MOVEABLE HOLOGRAPHIC OPTICAL ELEMENT

ABSTRACT

5 An optical switch formed of a holographic optical element (HOE) disposed above a top surface of a substrate and moveable relative thereto is shown. Light is traveling through the substrate under total internal reflection, which creates an evanescent field extending beyond the reflecting surfaces of the substrate. The HOE is characterized, in one embodiment, by being formed from a plurality of strips that are moveable between a first position in which the strips are above the evanescent field and a second position in which the strips are inside the evanescent field. In the first position, the light in the substrate propagates unaffected by the HOE in a primary direction of propagation. In the second position, the light in the substrate is altered by the HOE and made to propagate in a reflected direction oblique to that of the primary direction of propagation.

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